

AN ADAPTIVE VOLTAGE SCALING DIGITAL PROCESSING COMPONENT
AND METHOD OF OPERATING THE SAME

ABSTRACT OF THE DISCLOSURE

5 There is disclosed a digital circuit comprising a digital
processing component, an adjustable power supply and power supply
adjustment circuitry. The digital processing component is
capable of operating at a plurality of selected clock
frequencies, wherein a maximum delay time of a critical path in
10 the digital processing component is determined by a level of a
power supply, VDD, of the digital processing component. The
adjustable power supply is capable of supplying VDD to the
digital processing component. The power supply adjustment
circuitry is operable to receive a first selected clock signal
15 and adjusts the level of VDD such that the maximum delay time of
the critical path of the digital processing component is less
than a pulse-width duration between a first clock edge of the
first selected clock signal and a second clock edge of the first
selected clock signal immediately following the first clock edge.